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AUTHOR Hansen, W. Lee; Weisbrod, Burton A.
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ABSTRACT

A reply is offered to Joseph Pechman and Ira Sharkansky, who have refuted the contentions of the authors in their book, "Benefits, Costs, and Finance of Public Higher Education," which deals with the size and distribution of costs and benefits. Pechman and Sharkansky's critique, "The Distributional Effects of Public Higher Education in California," appears in the "Journal of Human Resources," v5 n3 page 361-370, Summer 1970. The Hansen-Weisbrod approach involved comparing the distributional pattern of subsidies for higher education in California with the distribution of state and local taxes. It was emphasized that the final work as to the redistributional effects of all government programs cannot be written on the basis of a study of any one public service. A major objection of Pechman and Sharkansky centered on the authors' treatment of the distribution of the burden of taxes that support higher education. This issue is discussed, along with those of classifying beneficiaries and general policy implications. (LBH)

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ON THE DISTRIBUTION OF COSTS AND BENEFITS OF PUBLIC HIGHER EDUCATION: REPLY

W. Lee Hansen and Burton A. Weisbrod

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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DISCUSSION PAPERS

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THE UNIVERSITY OF WISCONSIN, MADISON, WISCONSIN

ON THE DISTRIBUTION OF COSTS AND BENEFITS OF PUBLIC HIGHER EDUCATION: REPLY

W. Lee Hansen and Burton A. Weisbrod*

The research reported here was supported by funds granted to the Institute for Research on Poverty at the University of Wisconsin by the Office of Economic Opportunity pursuant to the provisions of the Economic Opportunity Act of 1964. The conclusions are the sole responsibility of the author. We are indebted to a number of colleagues and friends who have discussed with us the subject of this Reply, in particular Glen C. Cain, Robert H. Haveman, Alphonse G. Holtmann, Robert J. Lampman, and Eugene Smolensky.

*Departments of Economics and of Educational Policy Studies, and Senior Staff Members, Institute for Research on Poverty, University of Wisconsin.

February 1971

Should economists still believe that their journal articles remain unread and even if read, politely ignored, our recent experience should quickly disabuse them. The JHR has already published five comments on our paper,[1] and prepublished copies of at least two of the comments (by Joseph Pechman and Ira Sharkansky) have made their way to and through Washington officialdom, the higher education establishment, and our own university administration. These developments suggest that our results may have hit a more sensitive nerve than we had suspected, by calling into question an important part of the folklore about higher education's role in income redistribution.

Pechman and Sharkansky, to whose comments this reply is directed, focus the bulk of their attention on our treatment of the income distributional effects of public higher education. We are pleased to see this emphasis on distributional considerations, for there has been too little work at either the conceptual or empirical level on the distribution of benefits from public expenditure programs. Hence there is need to examine alternative approaches for analyzing the distributive effects of public programs.[2]

Our approach, as part of a book dealing with the size and distribution of benefits and costs of one public service, higher education, involved comparing the distributional pattern of subsidies for higher education in California with the distribution of state and local taxes.

Specifically, we showed for different classes of families--those with no children in public higher education and those with children in each of

California's three public systems of higher education--the average family income and the higher education subsidy received. To highlight the magnitude of these subsidies, we also presented data on all state and local taxes paid, based on the average income of each of these different population groups. Finally, we indicated that the pattern of net transfers (subsidies received less average state and local taxes paid) is least favorable to junior-college students, who come from families with lower average income, and is most favorable to University of California students, who come from higher average-income families.

We must underscore here again what we were careful to emphasize earlier (article, p. 189, and book, p. 77)--that the final work as to the redistributional effects of all government programs cannot be written on the basis of a study of any one public service. A broader analysis is needed of the distribution of the benefits from the full range of government programs, since some state and local services benefit the less affluent and the non-college-going population, while others benefit the wealthy and the college-going. In the absence of complete information on all programs, however, and given the frequent claims that public higher education is a major program for income redistribution, it seemed worthwhile to undertake this limited analysis.

Tax Allocation

A major objection of Pechman and Sharkansky centers on our treatment of the distribution of the burden of taxes that support higher education. Sharkansky claims that what is relevant is not the distribution of actual

state and local tax payments, but rather the distribution of tax payments reweighted to reflect the relative mix of state versus local expenditures on public higher education. His position is that "since" public higher education in California is financed primarily--71 percent--by the somewhat progressive state tax system, and only 29 percent by the regressive local tax system, the net redistributive effect is "substantially different" from our estimates (Sharkansky, p. 235). (For illustrative purposes he assumes that 100 percent of support for public higher education comes from State taxes.) A rearrangement of numbers from his Table 1 (p. 234) plus the addition of data from our earlier paper gives the set of annual "net transfers" shown in Table A.

TABLE A

NET TRANSFERS FROM HIGHER EDUCATION IN CALIFORNIA

Family Group	Annual Net Transfers: Hansen-Weisbrod Results	Annual Net Transfers: Sharkansky Results	Median Family Income
	(1)	(2)	(3)
Families without children in public higher education	$ -650	not shown	$ 7,900
Families with children attending junior colleges	+ 40	$+ 509	8,800
Families with children attending state colleges	+630	+1160	10,000
Families with children attending University of California	+790	+1376	12,000

Source: Ira Sharkansky, "Comment," Journal of Human Resources, V (Spring, 1970), Table 1, p. 234; and W. Lee Hansen and Burton A. Weisbrod, "The Distribution of Costs and Direct Benefits of Public-Higher Education: The Case of California," Journal of Human Resources (Spring, 1969), Table 10, p. 190.

Whether one looks at our results or Sharkansky's, the evidence is clear and unmistakable: net transfers per family increase as we move down the table. And since median family incomes also increase, but at a slower rate, net transfers favor students at the systems where median family income is highest.[3] Indeed, Sharkansky concedes that his results do not contradict ours, when he states, "Note that the recalculations do not turn around the direction of the Hansen-Weisbrod findings" (p. 35). Our conclusion is reinforced: among college students, those eligible and able to attend only the Junior Colleges receive the smallest net transfers, and on average they come from lower income families than those whose children are enrolled in either of the other two public systems. And students in the State Colleges receive smaller net transfers and on average come from lower income families than those enrolled in the University of California.

More important, though, Sharkansky's weighting approach for determining who pays the taxes is questionable. Either one compares the distribution of higher education subsidies with all state and local taxes, as we attempted to do, or one compares the subsidies with only those state and local taxes used "to support public higher education." Sharkansky apparently prefers the latter, although he neither says so explicitly nor do his calculations clarify his intentions. Such an approach requires making two highly arbitrary assumptions about the taxes paid at <u>each income</u> level for a particular public expenditre such as higher education. Specifically, his approach assumes implicitly that (1) if expenditures on public higher education were changed, then state and local taxes would be altered in the 71-29

percent proportion; and (2) if public expenditures on higher education were changed, then there would be an equi-proportional change in state taxes at each income level, and an equi-proportional (but not necessarily the same) change in local taxes at each income level.[4] Unless these assumptions are made, it does not follow that simply because the state tax system as a whole is more progressive, that state support for public higher education is financed more progressively.

Pechman's criticism involves the same assumptions about taxes; but he too is apparently unaware of the arbitrariness of these assumptions when he argues that we should have considered only those state and local taxes which are paid to support public higher education. He goes on to identify not only which taxes but which taxpayers--according to income group--pay for public higher education. He does this by assuming implicitly that all taxpayers at every income level pay the same percentage of their total state and local tax payments for higher education.[5] While such an allocation may seem reasonable at first blush, this distributional assumption is actually completely arbitrary; who can say how much of which income class's tax dollars pay for any particular public service?

It is possible to give meaning to the question of whose tax payments finance a particular public expenditure, but not by the method used by Pechman. We suggest that the particular expenditure, and the taxes to finance it, must be viewed in a marginal, not an average fashion. One should ask: if public expenditures on higher education in California were reduced (increased) by a specified amount, ceteris paribus, which taxes and whose tax payments would be reduced (increased)? We do not know the answer. There is little likelihood, however, that there would occur an equi-proportional

decrease in every individual type of tax paid by persons at each income level. Yet this is precisely the assumption that is implicit in the tax-allocation approach adopted by Pechman! (Moreover, the question might be answered quite differently if increased rather than decreased expenditures were under consideration.) We do not deny either the desirability or the possibility of determining who pays the marginal taxes. Rather we wish to emphasize that researchers cannot simply assume, without offering some kind of justification, that the distribution of marginal taxes (marginal in the sense that they would be unnecessary if a particular program were cut back or eliminated) is the same as the distribution of taxes currently paid.

We believe that a comparison of benefits received with taxes paid in the marginal sense is the preferred approach. Finding it difficult to make the marginal allocations, however, we preferred a second-best approach --comparing benefits with total taxes paid for all state-and-local services. We thus avoided making arbitrary decisions as to which group of taxpayers paid those taxes that financed higher education. At the same time our results showed the relative magnitudes of the individual benefits (subsidies) from public higher education, by comparing benefits with a tax-payment magnitude; for the latter we chose total state and local taxes paid by individual taxpayers during the years that their children were in college. Some other basis for comparison might have been used, and in that sense our approach is arbitrary. More important, however, our approach, in contrast with that involving the "arbitrary" allocation of taxes, is less likely to be misleading. The point is that a comparison of benefits from higher education with the taxes paid "for higher education" may lead readers to a

quick judgment regarding the "equity" of the balance, whereas a comparison of higher-education benefits with taxes paid for all state and local programs has weaker normative connotations, since readers recognize, quite properly, that the benefits from other programs may be distributed quite differently.

In short, given the absence of estimates of the marginal distribution of tax burdens, to finance any particular public program, it is best to concentrate attention simply on the distribution of benefits. If a comparison with taxes is desired, we suggest some magnitude which does not require a determination of whose tax dollars finance the particular program.

Classifying Beneficiaries

We turn next to the question of how people should be classified for the purpose of analyzing the distribution of subsidies and taxes paid. While Pechman appears to say that there is only one correct way, we believe that there may be several different useful ways. We see merit in examining the distribution of benefits and burdens for people classified by income level, as does Pechman. However, we also believe that it is useful to classify people by level of benefits received (type of higher education system attended), as we have done. Our reasons are as follows. While all high school graduates in California are eligible to attend a Junior College (JC), only the top three-eights are eligible to attend a State College (SC), and an even smaller group--the top one-eighth--is eligible to attend the University of California (UC). As we have pointed out, the subsidy level is lowest at the JC's and highest at the UC's. Again, as we have shown, the de facto eligibility--which is a product of achievement in high school together with

financial constraints--leads to an overrepresentation of high-income students in high-subsidy (UC) schools and conversely for lower-subsidy (JC) schools. The point to be emphasized is that the system of eligibility and subsidies --a system that is, after all, an instrument of policy--determines which students (in terms of family income level) will in fact receive the various subsidies. Consequently, it is useful for the purpose of policy formulation to know, as we showed, that on average the largest higher-education subsidies are going to those state-supported universities where high-income students are most highly represented.

Although we are eclectic in our view of how to look at the distribution of benefits and burdens, we do not favor Pechman's approach. As we pointed out earlier, his approach involves arbitrary assumptions about the amounts of taxes paid at each level of income to support a particular public expenditure program. In addition, his approach, by failing to distinguish between those persons who receive benefits and those who receive none, hides the substantial and unequal variance in benefits within income classes. This is not an objection to examining the distribution of benefits and burdens by income class, but rather is an objection to Pechman's approach. What he has done is to average the substantial benefits received by a small number of persons who receive benefits, with the zero-benefits received by the vastly larger number of persons at each income level. This procedure also cloaks the fact that among families with children of college age, the proportion that benefit from public higher education is much lower at the bottom end of the income distribution than at the top end. If Pechman had looked at benefits and burdens for only those people receiving benefits, the picture

portrayed would have been quite different. While the tax burden per beneficiary would have been unchanged, the benefit per beneficiary would have been many times greater than the average benefit for every unit in the income distribution, since most of the units gain no benefits whatsoever. Benefits would be far in excess of tax burdens (as Pechman calculates those burdens) at all income levels, although the absolute differences would decline as income rises. The rather considerable differences this approach would show, as compared to what Pechman has presented, should alert us to the danger of jumping to quick conclusions about what is the "right" way of viewing the distributional effects of a public program.

Even were we to concede the applicability of Pechman's arbitrary procedure for determining the income distribution of taxes to a specific public expenditure program, what does he find? He reports that the California system provides subsidies that approximately equal taxes paid "for higher education" in each income class except those over $20,000 per year (Pechman, Table 3). For a public program that is so frequently justified on grounds of its effects on equality of opportunity and hence on the income distribution, this is scarcely testimony for its success. There is precious little redistribution going on here![6]

More important why should one be pleased with a balance between the taxes paid for higher education (even if that concept were meaningful) and the subsidies received within each <u>income size</u> class? Is the public higher-education system working "satisfactorily" from an equity viewpoint when most low-income persons without children receive no higher-education

subsidies but pay taxes "for higher education," while many high-income persons with children in the California colleges and universities receive large subsidies? Admittedly, a one-year comparison of subsidies and taxes is not adequate, because families do not have children in college continuously. Ideally, a lifetime analysis would be made, unfortunately though, Pechman's approach does not handle this problem any more satisfactorily than we did.

Pechman and Sharkansky also fault our tax-burden estimates because of our exclusion of state corporate income taxes. Estimation of the incidence of this tax is a major undertaking which even the State of California, with its large program of tax research, had not performed. Moreover, it is entirely too simple to assume uncritically--as Pechman does--that the incidence of the corporate income tax is progressive. The ownership of corporate equity certainly increases with income; but it is a large leap from this observation to a conclusion about the income-class incidence of the tax. Pechman herself wrote in her recent book that "...there is probably less agreement about who really pays the corporate income tax than there is about any other tax." Although he was referring to the federal tax, the bulk of his discussion also applies to a state tax. Even to the extent that the tax is borne by corporate shareholders, and not shifted, there is a presumption that the tax has been capitalized into equity prices. Thus, <u>current</u> shareholders are not likely to bear much of the tax even if corporations have been unable to shift it.

<u>Other Issues</u>

We turn now to several other criticisms made by Sharkansky and Pechman. To begin with, we do share Pechman's view that even more significant than

the pattern of subsidies is the effect of the subsidies on the lifetime distribution of income. Of course, no one knows whether the rate of return on higher education varies systematically by income class of student, or if it does, what the differences, or even the direction of differences, are. Until evidence is obtained, however, we see no justification for assuming, as Pechman seems to suggest, that the income distribution of subsidies is either uncorrelated or negatively correlated with subsequent changes in the lifetime distribution of earnings. Moreover, if the price elasticity of college-going is greater (absolutely) for lower income students--as seems probable--then a shifting of subsidies from the nonneedy to the needy would tend to narrow the distribution of lifetime income unless rates of return on higher education are correlated in a strongly negative manner with parental income.

Sharkansky faulted us for the treatment in our book of the distribution of benefits as between residents and nonresidents of California. He asserts that just as we excluded the taxes paid by emigrants when we estimated the benefits to California taxpayers from the State's investment in public undergraduate education, so we should have included the taxes paid by college educated immigrants to California.

Such symmetry may seem reasonable, but it would be incorrect. As we explained (book, pp. 38-40), it would be proper to consider immigration as producing a "benefit" from California public higher education if, but only if, the immigration occurs because of the existence of the California system of public undergraduate education. Perhaps later research will shed light on the elasticity of migration with respect to expenditures on public higher education in the state, but Sharkansky offers no evidence and gives no

indication of even recognizing the issue. Our judgment--and it remains only a judgment--is that the elasticity is close to zero, at least over the "relevant range" of plausible variation in public support levels. Moreover, if one were to accept Sharkansky's argument and count tax payments (less public service costs), we presume accompanying immigration, this would imply that all immigration of noncollege-educated people and the taxes they pay would be attributed to the state's public higher education. This is obviously untenable.

Sharkansky's mistreatment of the alleged externalities from migration has its counterpart in Pechman's comments about external benefits. Pechman fails to distinguish between external benefits from public higher education and from higher education in general. The nature and magnitude of external benefits of higher education at the undergraduate level continues to be an important and unresolved issue. Pechman admits that "it is probably impossible to measure the value of the public benefits" (p. 369); yet he defends the current practice of charging low tuition for all students at public universities by arguing implicitly that the external benefits are large enough to justify the present levels of subsidies to even the high income students.

His logic is faulty. Even if the external benefits of higher education are "large"--and we are dubious--this is not relevant to the allocative-efficiency question. If public subsidies to the wealthy were diminished, would many of the wealthy students forego college? Or, insofar as some might shift to private colleges, is there any reason to believe that the external benefits from private higher education are any less than those from

public higher education? Finally, for those financially able students who would decide not to go to college at all without the public subsidy--presumably because they are not very serious about college, might we not guess that the loss of external benefits would be small, zero, or even negative?

The fact is that even if the external benefits of higher education are high, Pechman has offered absolutely no reason for believing that they are greater for public than for private colleges; thus, since a cut in public subsidies to financially able families would probably result in little diminution in their rate of college attendance, such a cut would produce little or no loss in external benefits. What counts for allocative efficiency is not the external benefits per dollar of subsidy to each financially able public university student, but the marginal external benefits with respect to the level of public subsidy. Only to the extent that a decrease in such subsidies would cause well-to-do students to forego college altogether--not merely to shift from public to private schools--would there be any change in the external benefits of higher education, however large or small, positive or negative, those benefits are!

Policy Implications

Sharkansky and Pechman are both unhappy about our work, especially about the policy implications that they see in it. Although we paid no more than passing attention to policy recommendations in either our article or book, our critics are apparently concerned about recommendations we have made elsewhere.[8]

Sharkansky asserts: "...any policy recommendations that rely on such analysis cannot be accepted as the unambiguous products of social science" (p. 230). If one understands the difference, however, between positive findings and normative (value) judgments, and the relevance of both for the making of policy, one realizes that policy recommendations can never be the "unambiguous products of social science"--no matter what the quality of the research!

Pechman, too, seems most bothered by the policy significance of our work. Income-distributional effects are not important, he claims, no matter how they are viewed. Indeed, he says that they are irrelevant to a decision on tuition for public higher education! Appropriate higher-education pricing policy depends, he asserts, on "value judgments...regarding the benefits of institutions of higher learning" as well as on price elasticities of demand for higher education among students from low-income families (p. 369).

These matters are surely relevant. But we reject the view that the distribution of subsidies is relevant to public policy only through its effects on enrollments. We believe that the public does, and should, care about the equity aspects of its expenditures and taxation, and not simply on the resource-allocative effects. Perhaps Pechman agrees, but his comment and his additional statements in correspondence suggest strongly that he does not.

In considering alternative policies for financing higher education, let us bear in mind that while some low-income students do benefit handsomely form the availability of public higher education, the existing

form of public support provides subsidies to all students, and high-income students (in California, but most likely in every state) are represented in disproportionately large numbers at the most selective institutions, where public subsidies per student are greatest.

As public debate continues over higher education finance, tuition levels, loan and grant schemes, and student eligibility, the cause of clear thinking will not be served by argumentation for "free, or almost free, access to a public institution of higher learning..." (Pechman, p. 369) when the costs for the public treasury are disregarded. Pechman may be right in saying that "free...access" (zero tuition) is "the simplest and most effective method of insuring enrollment of qualified poor and near-poor students." But if, in addition to essentially zero tuition for all, grants are to be made "...to low-income students to offset the substantial cost of foregone earnings"--a point far too important to be relegated by Pechman to a footnote--the aggregate fiscal burdens will rise considerably. Pechman totally ignores this cost implication of his position. (He also ignores the question of how the burden of these additional taxes would be distributed among population groups, income or other. Many people might like to see "free access" to education and indeed, to all goods and services, but budget constraints exist. It is not wise, we submit, to ignore the extent to which subsidies are now going to relatively high-income persons who would presumably go to college and without great financial hardship, even without the subsidies.

FOOTNOTES

[1]W. Lee Hansen and Burton A. Weisbrod, "The Distribution of Costs and Direct Benefits of Public-Higher Education: The Case of California Journal of Human Resources (Spring, 1969), pp. 176-191. See "Communications" by Elchanan Cohn, Adam Gifford, and Ira Sharkansky, Journal of Human Resources (Spring, 1970), pp. 222-236; Joseph Pechman, "The Distribution Effects of Public Higher Education in California," Journal of Human Resources (Summer, 1970), pp. 361-370; and Robert Hartman, "A Comment on the Pechman-Hansen-Weisbrod Controversy," Journal of Human Resources (Fall, 1970), pp. 519-523. Our article was taken from our recent book, Benefits, Costs, and Finance of Public Higher Education, (Chicago: Markham Publishing Co., 1970).

[2]We have dealt with some of these issues in our forthcoming paper, "Distributional Effects of Tax and Expenditure Programs: A Framework for Analysis."

[3]Both Pechman and Sharkansky object to our use of family income data for parent-supported students rather than for all students. We regret that we did not make clear why we made such a choice, but it was made on solid grounds. Our objective was to indicate the incomes of the parent families from which college students are drawn, in order to highlight the income selectivity that operates in affecting college attendance and, hence, the amount of subsidy received. While income data for parent-supported children are quite clear in representing parental family income, the "family" income data for self-supported students are not so clear. A careful reading of the questionnaire in the Appendix to the Sanders-Palmer study (Edward Sanders and Hans Palmer, The Financial Barriers to Higher Education in California, Pomona College, 1965) reveals that students over age 21 who did not list their parents on college record forms were instructed to forward the questionnaires to their parents, or if that did not seem appropriate, to report their own "family" income. Based on our inspection of the data, we concluded that most of the self-supported students reported their own income rather than their parent's income. First, we noted that the average family size of self-supported students is considerably smaller than that for parent-supported students; this indicates that self-supported students had established their own households. Second, self-supported students are older and thus more likely to be independent of their parents, and hence are more likely to be reporting their own (lower) incomes than the income of parents. Third, the percentage of self-supported and also part-time students was greatest at the JC's and lowest at UC; hence we are picking up the much larger proportion of older students at the JC's who are continuing part-time college study while working and maintaining a family of their own. For all these reasons we concluded that the incomes of the parent-supported students gave a better representation of the parental incomes of all students than would be obtained by blending the quite differently reported incomes of the two groups of students.

[4]Since state and local governments do not finance all other programs in the ratio of 71-29 percent, the percentage change would not be the same for state as for local taxpayers.

[5]Pechman is not alone in following this approach. Richard W. Judy and Douglas M. Windham adopt the same arbitrary allocation procedure in their studies of the redistributional effects of public higher education; see Douglas M. Windham, "The Redistributional Effects of Public Higher Education in Florida" (Monograph Series F, No. 1, Department of Economics and Business Administration, The University of North Carolina at Greensboro, Greensboro, North Carolina, September, 1969); and Richard W. Judy, "On the Income Redistributive Effects of Public Aid to Higher Education in Canada" (Institute for Quantitative Analysis of Social and Economic Policy, University of Toronto, September 1969).

The California Legislative Analyst also assumed--implicitly--constancy of the proportion of taxes paid at each income level that finance higher education. This, together with the disregard of JC students in the Analyst's report (Letter from Office of Legislative Analyst, State of California, in Tuition for California's Public Institutions of Higher Education, Joint Committee on Higher Education, Hearings, October 13 and 16, 1967) is the answer to Pechman's question regarding why we did not present the Legislative Analyst's findings; we believed them to be arbitrary and incomplete.

[6]Judy reaches a similar conclusion for Canada, while Windham finds that for Florida these subsidies exceed taxes at higher income levels but fall short of taxes at lower income levels.

[7]Joseph A. Pechman, Federal Tax Policy Washington, D.C.: 1966 (Brookings Institution), p. 99.

[8]See W. Lee Hansen and Burton A. Weisbrod, "A New Approach to Higher Education Finance" (Discussion Paper 64-70, Institute for Research on Poverty, University of Wisconsin February, 1970) (to appear in Mel Orwig, ed., Financing Higher Education [American College Testing Program, forthcoming, 1971]). Apparently Sharkansky was referring (in January, 1970) to an earlier draft, "Another Approach to Higher Education Finance: Full Cost Tuition and Grants Based on Ability to Pay" (Department of Economics, University of Wisconsin, mimeo, November, 1969).